BookletChart™

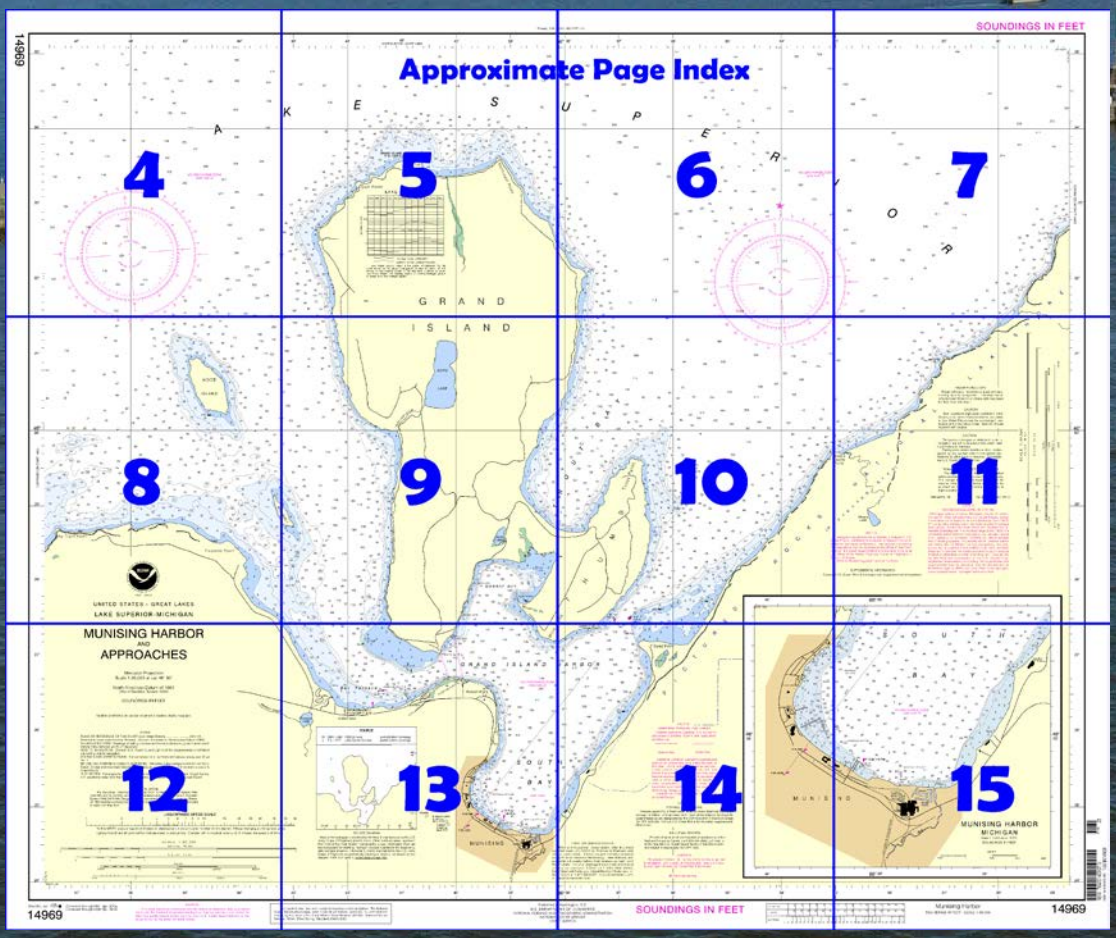
Munising Harbor and Approaches

NOAA Chart 14969

A reduced-scale NOAA nautical chart for small boaters

When possible, use the full-size NOAA chart for navigation.

- *Complete, reduced-scale nautical chart*
- *Print at home for free*
- *Convenient size*
- *Up-to-date with Notices to Mariners*
- *Compiled by NOAA's Office of Coast Survey, the nation's chartmaker*



Published by the
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Coast Survey
www.NauticalCharts.NOAA.gov
888-990-NOAA

What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.

For latest Coast Pilot excerpt visit the Office of Coast Survey website at http://www.nauticalcharts.noaa.gov/nsd/searchbychart.php?chart=14969.

(Selected Excerpts from Coast Pilot)
From Grand Portal Point, the shore trends southwest for 9.7 miles to **Sand Point. Sail Rock** and **Miners Castle Point,** 1 and 6 miles southwest of Grand Portal Point, respectively, are prominent. S of Pictured Rocks, a high wooded bluff continues close to shore past Sand Point. Shoals extend about 0.3 mile offshore in this stretch. About 2.2 miles southwest of Miners Castle Point, a shoal with a least depth of ½ foot makes out from shore and extends southwest to a point 0.3 mile northwest of Sand Point. The shoal is marked by a lighted bell buoy.

Grand Island, about 7.5 miles long and 3.5 miles wide, is a high wooded island west of this reach. The north end is 9 miles west of Grand Portal Point, and the southeast end is 0.7 mile west of Sand Point. **Grand Island Light** (46°33'35"N., 86°40'48"W.), 190 feet above the water, is shown from a white post on the northwest point of the island. Shoals extend about 0.5 mile off the two points at the north end of the island, and a shoal with depths of 2 to 6 feet extends 0.5 mile S and southwest from the south point of the island. A buoy marks the southwest edge and the south edge of the shoal at the south end of the island. Shoals extend no more than 0.3 mile off the east and west shores of the island.
The **Thumb,** the southeast part of Grand Island, is high and roughly oval in shape, about 3 miles long and 1 mile wide. The Thumb is connected to the southeast side of Grand Island by a low narrow neck of land, with bays formed on either side between the Thumb and the island. **Trout Bay** is north of the neck, and **Murray Bay** is S.
A shoal with depths of 10 to 18 feet extends 0.6 mile north from **Trout Point,** the north point of the Thumb. A shoal, with a depth of 8 feet at the outer edge and marked by a lighted bell buoy, extends 0.5 mile east from shore just southeast of Trout Point. The shoal border for the remainder of the east side of the Thumb is narrow and is marked by a buoy opposite Sand Point.
A narrow deepwater channel leads between the southeast side of the Thumb and the shoal off Sand Point to Grand Island Harbor. The shoal is marked on its west edge by a lighted bell buoy; least depth of the shoal is ½ foot. The channel is marked by a **217°** lighted range at Munising.
Grand Island Harbor, the area of deep water off the south end of Grand Island, is a refuge during N storms for the largest vessels plying the Great Lakes. Anchorage with good holding ground is in the mouth of Murray Bay, between the S point of Grand Island and **Wick Point,** the S point of the Thumb. Avoid the submerged cables that extend from Powell Point to the south end of Grand Island.
South Bay, between Sand Point on the East and **Powell Point** on the West, extends 2.5 miles South from Grand Island Harbor. Shoals extend about 0.2 mile from the shores of the bay.
Munising Harbor is at the south end of South Bay at the town of **Munising, MI** Prominent are the lighted radio masts on the high ground west of the town and the black stack and silver tank at the Neenah Paper Company on the southeast side of the town. A hospital is in the town. A **217°** lighted range in the town marks the harbor approach.
Anna River, which flows into the southeast corner of South Bay, is not navigable by even small craft.
Small-craft facilities.–The L-shaped city dock is 0.6 mile west of the mouth of Anna River. The dock has depths of 14 to 21 feet along the outer face and depths greater than 6 feet along the remainder of the outer half. Facilities developed by the Michigan State Waterways Commission are at the dock, Transient berths, gasoline, electricity, and sewage pump-out facilities are available. Limited repairs are available from local garages. A launching ramp is 0.6 mile northwest of the dock. The ruins of a large dock are 0.4 mile northwest of the city dock.
From Powell Point, on the west side of the entrance to South Bay, the shore trends southwest for 1.5 miles, thence northwest for 3 miles to **Fivemile Point,** and thence W for 2.5 miles to **Au Train Point. Bay Furnace** is the bight formed west of Powell Point. From a width of 0.2 mile in Bay Furnace, the shoal border increases to a width of 1.2 miles northeast of Fivemile Point. **Williams Island** is near the outer edge of the shoals northeast of Fivemile Point.

U.S. Coast Guard Rescue Coordination Center
24 hour Regional Contact for Emergencies

RCC Cleveland	Commander 9th CG District Cleveland, OH	(216) 902-6117

Table of Selected Chart Notes

Ⓟ Pump-out facilities

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted buoys.

CAUTION

Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details see U.S. Coast Guard Light List.

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Marquette, MI KIG-66 162.55 MHz (Chan. WX-1)

Low Water Datum, which is the plane of reference for the levels shown on the above hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below Low Water Datum, the existing depths are correspondingly greater or lesser than the charted depths.

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot 6 for details.

NOTE Z

NO-DISCHARGE ZONE, 40 CFR 140

Michigan waters of Lakes Michigan, Huron, Superior, Erie and St. Clair, all waterways connected thereto, and all inland lakes are designated as a No-Discharge Zone (NDZ). This chart falls entirely within the limits of a No-Discharge Zone (NDZ). Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. Commercial vessel sewage shall include graywater. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: http://www.epa.gov/owow/oceans/vessel_sewage/vsdnozone.html.

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 6. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at the Office of the District Engineer, Corps of Engineers in Detroit, Michigan.

Refer to charted regulation section numbers.

CAUTION

POTABLE WATER INTAKE

Vessels operating in fresh water lakes or rivers shall not discharge sewage, or ballast, or bilge water within such areas adjacent to domestic water intakes as are designated by the Commissioner of Food and Drugs (21 CFR 1250.93). Consult U.S. Coast Pilot 6 for important supplemental information.

SOURCE DIAGRAM

Most of the hydrography identified by the letter "j" was surveyed by the U.S. Army Corps of Engineers prior to 1974. Other outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels currently maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum 1983 (NAD 83) and for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1902 must be corrected an average of 0.471" southward and 0.764" westward to agree with this chart.

SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart No. 1

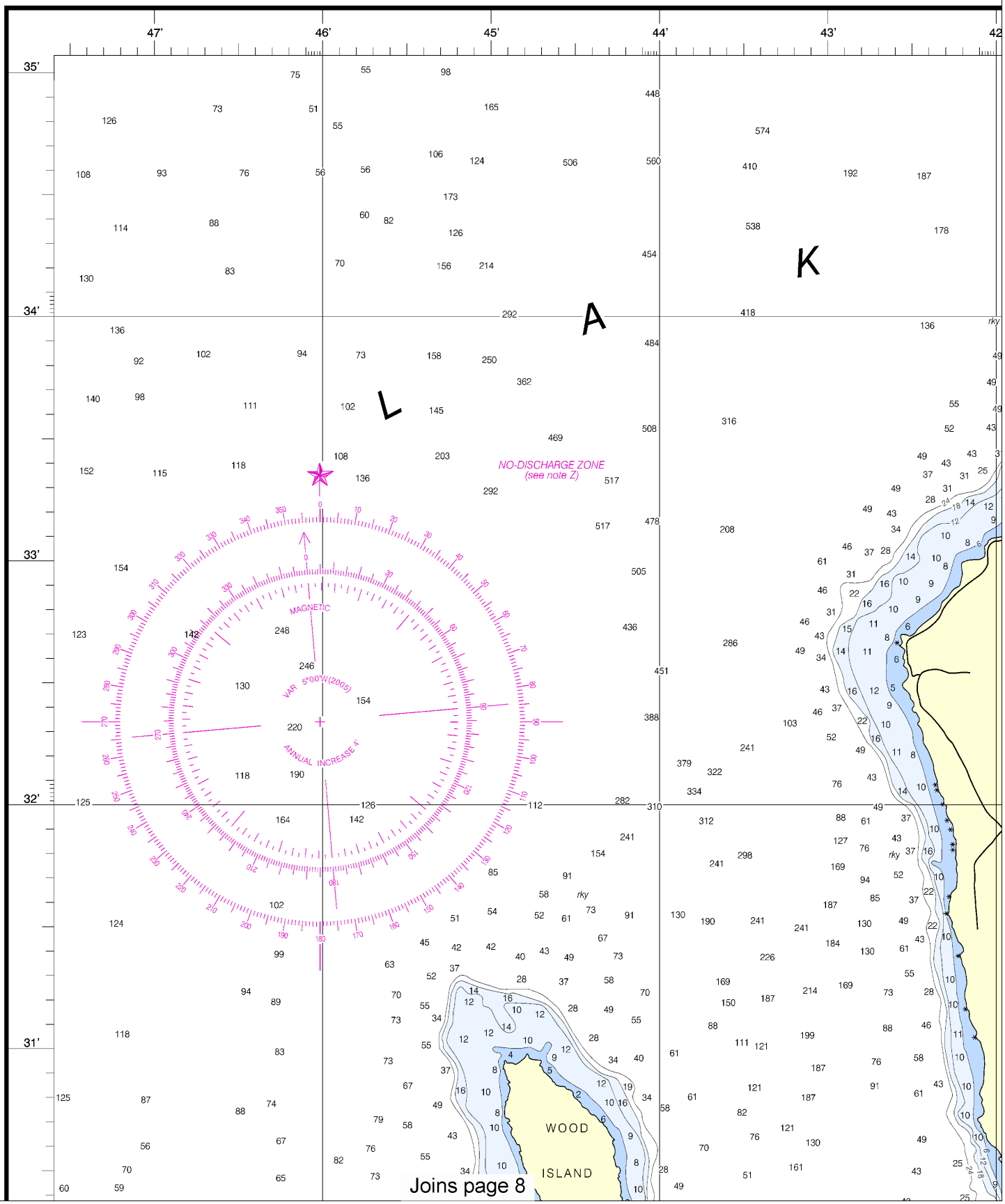
AIDS TO NAVIGATION. Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

AUTHORITIES. Hydrography and Topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, U.S. Coast Guard.

BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6.

SAILING DIRECTIONS. Bearings of sailing courses are true and distances given thereon are in statute miles between points of departure.

PLANE OF REFERENCE OF THIS CHART (Low Water Datum).....601.1 ft.
Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).



Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:30,000~~

Nautical Miles: 1 0 1 2

Yards: 1000 0 1000 2000 3000

See Note on page 5.

42' 41' 40' 39' 86° 38' 37' 36'

CONTINUED ON CHART 14963

E S U P

GRAND ISLAND LIGHT
Fl 6s 190ft 9 St M

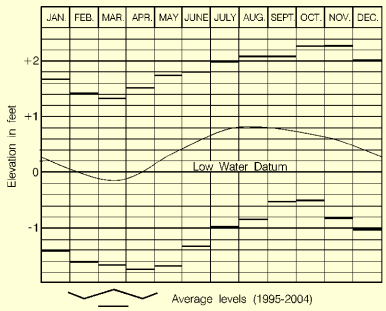
ABAND LT HO

North Point

Gull Point

Northeast Point

LAKE SUPERIOR



Average levels (1995-2004)

Extreme Levels (period of record)

Low Water Datum, which is the plane of reference for the levels shown on the above hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below Low Water Datum, the existing depths are correspondingly greater or lesser than the charted depths.

G R A N D

I S L A N D

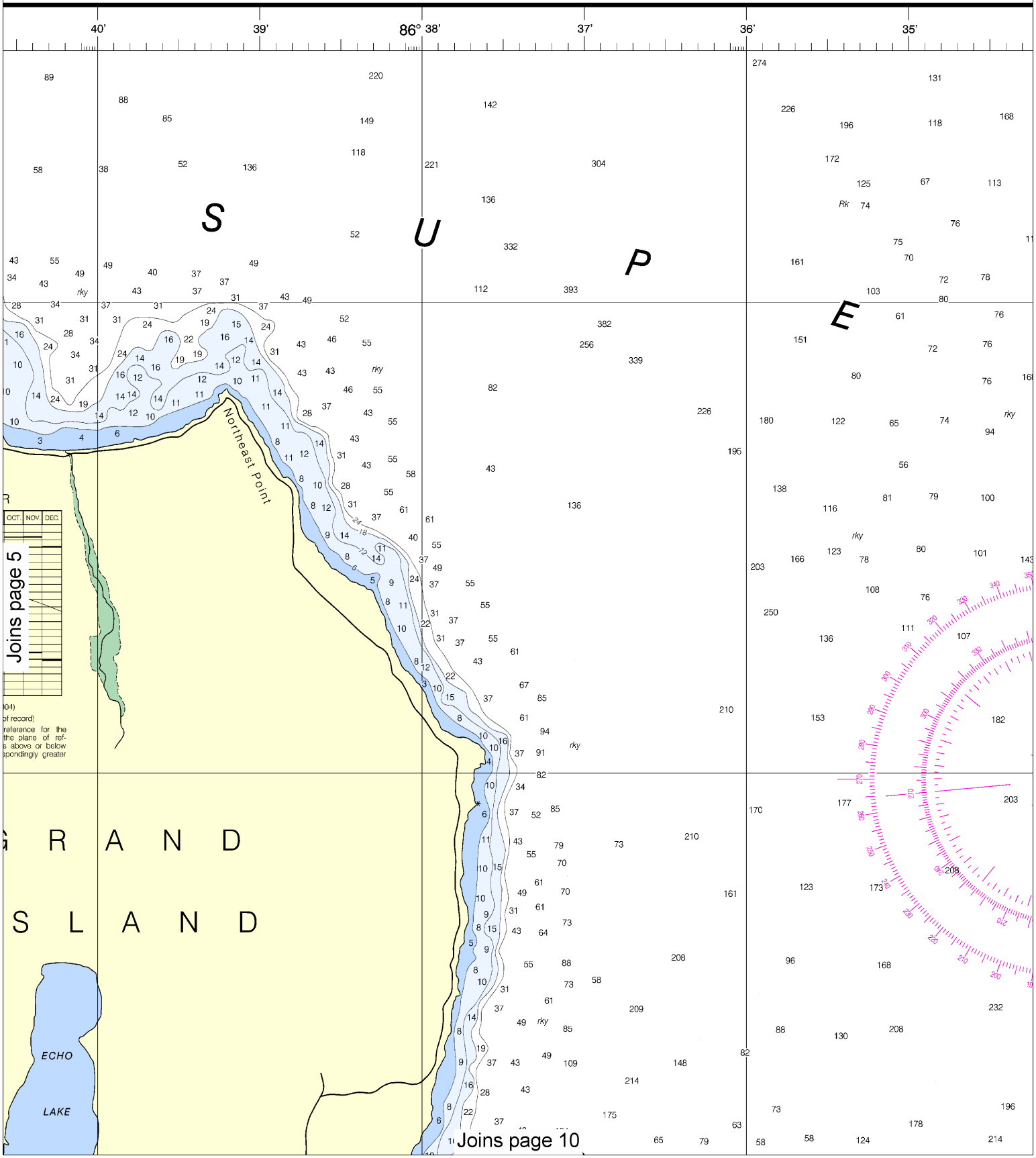
ECHO

LAKE

Joins page 6

Joins page 9

This BookletChart was reduced to 75% of the original chart scale. The new scale is 1:40000. Barscales have also been reduced and are accurate when used to measure distances in this BookletChart.



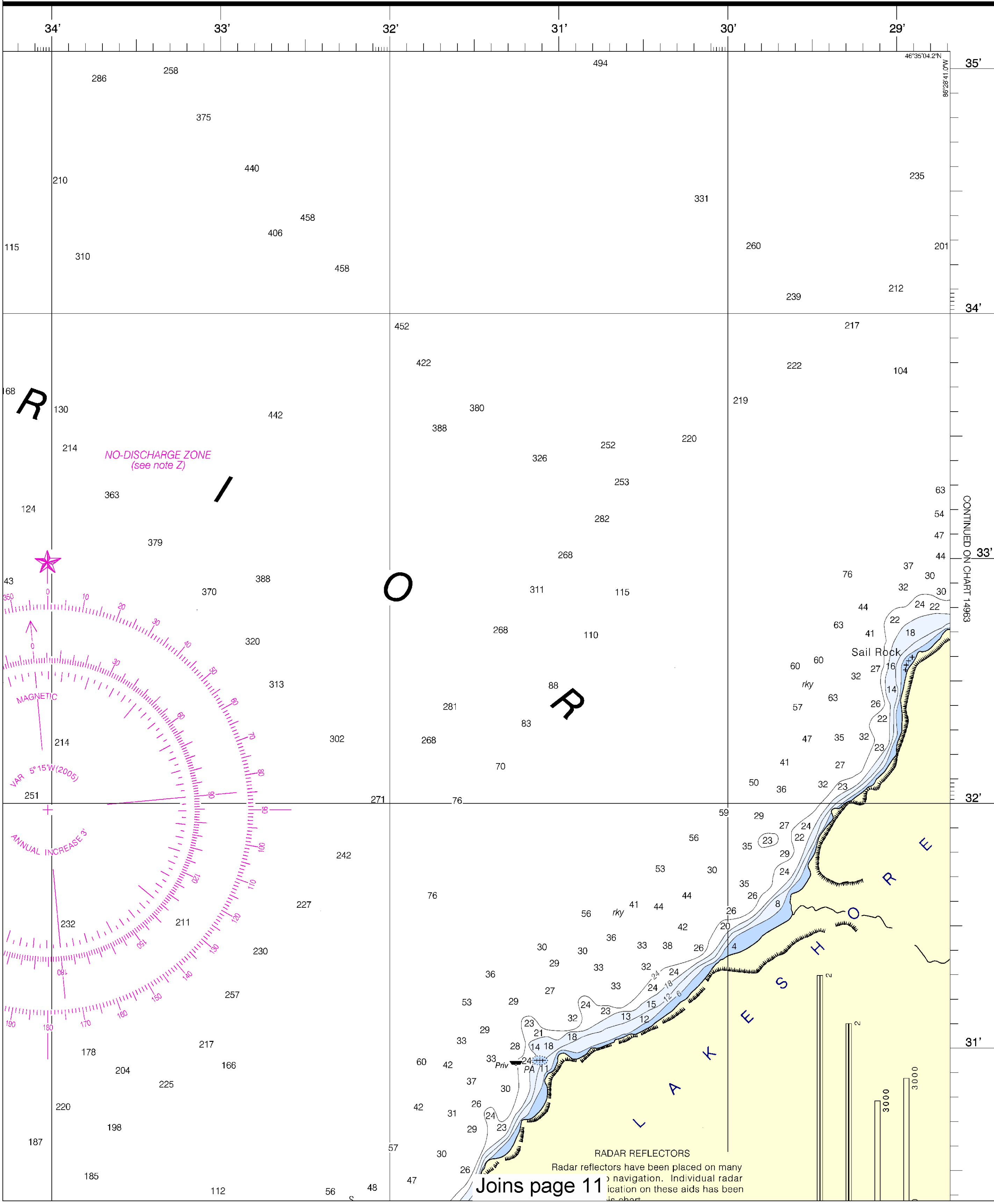
Printed at reduced scale. SCALE 1:30,000

Nautical Miles: 1 0 1 2

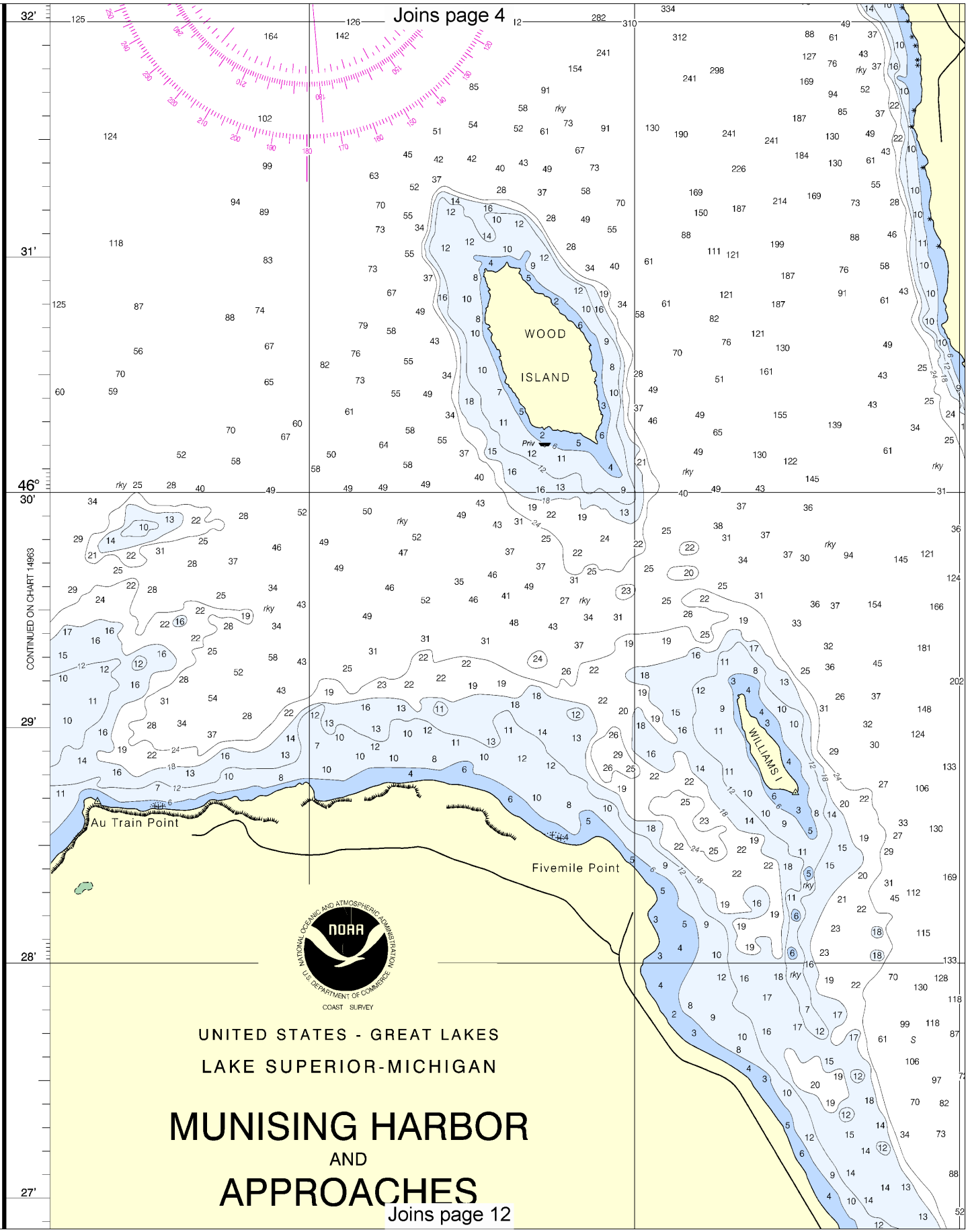
Yards: 1000 0 1000 2000 3000

See Note on page 5.

Note: Chart grid lines are aligned with true north.



This BookletChart has been updated through: Coast Guard Local Notice To Mariners: 4712 11/20/2012,
NGA Weekly Notice to Mariners: 4812 12/1/2012,
Canadian Coast Guard Notice to Mariners: 1012 10/26/2012.



UNITED STATES - GREAT LAKES

LAKE SUPERIOR-MICHIGAN

MUNISING HARBOR
AND
APPROACHES

Joins page 12

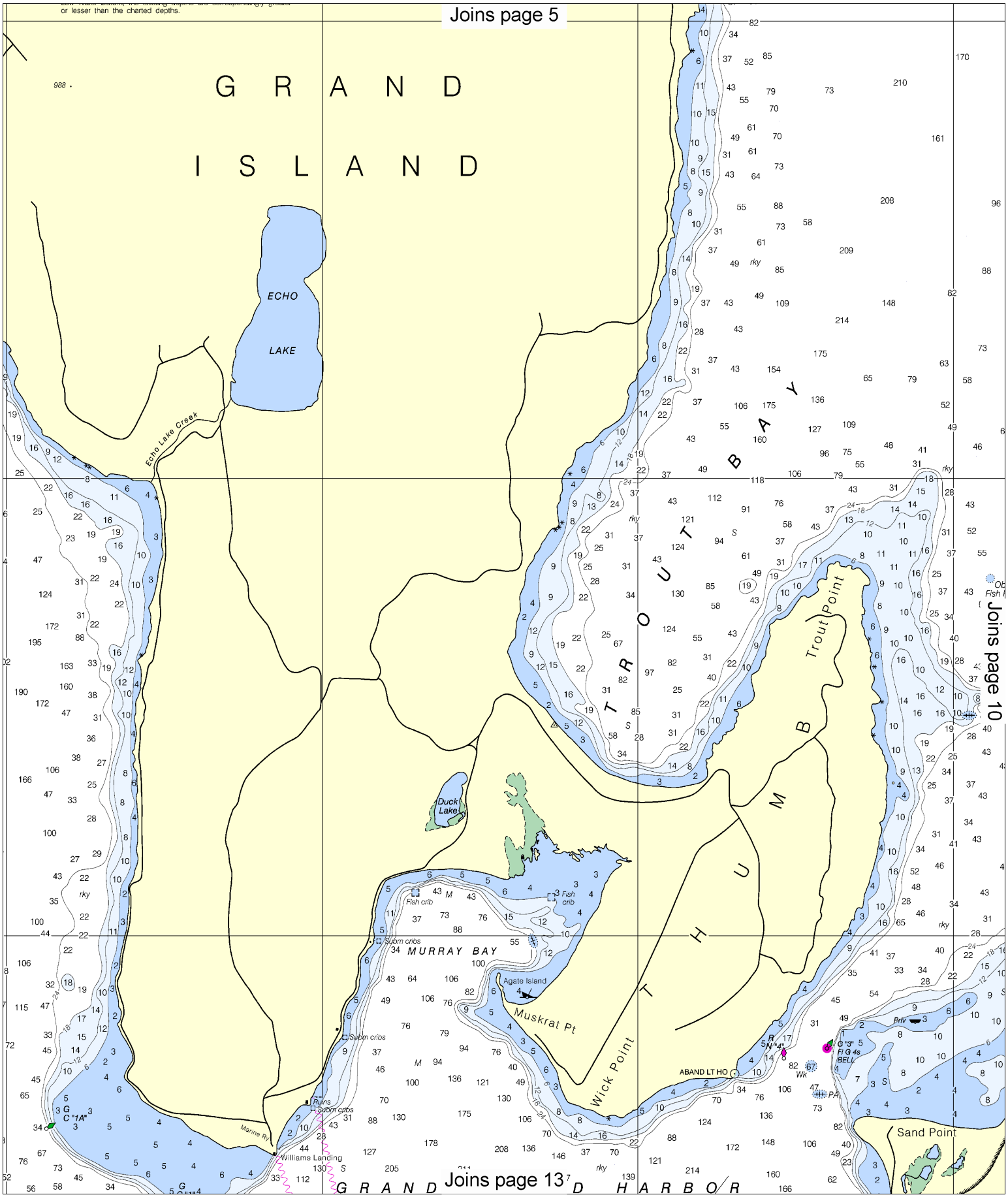
Note: Chart grid lines are aligned with true north.

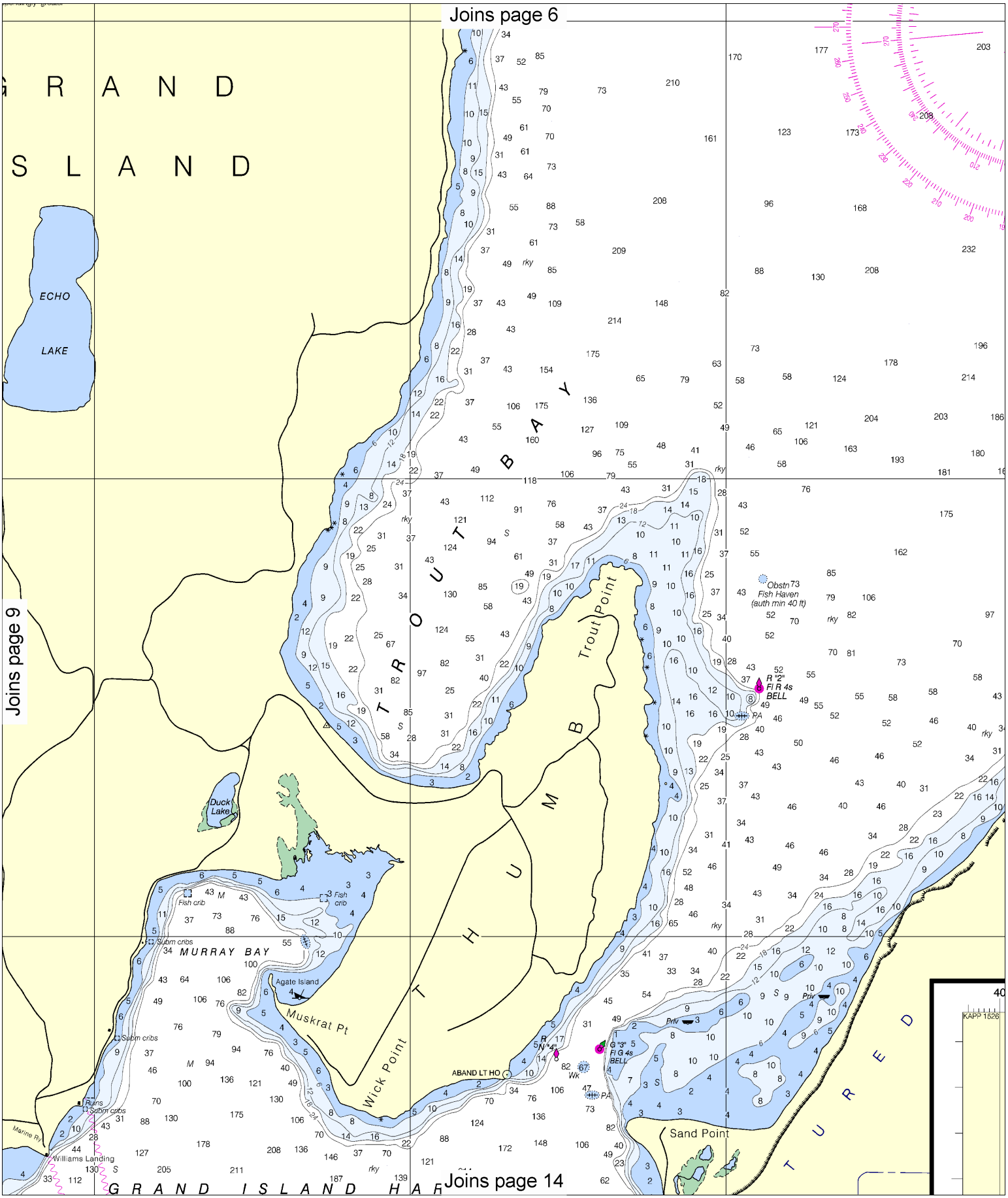
Printed at reduced scale. ~~SCALE 1:30,000~~

Nautical Miles: 1 0 1 2

Yards: 1000 0 1000 2000 3000

See Note on page 5.


Joins page 5
GRAND ISLAND
ECHO LAKE
Echo Lake Creek
TROUT BAY
Trout Point
THUMB
Duck Lake
Fish crib
Subm cribs
MURRAY BAY
Agate Island
Muskrat Pt
Wick Point
ABAND LT HO
Ruins
Subm cribs
Marine Ry
Williams Landing
Sand Point
Joins page 10
Joins page 13
GRAND HARBOR



10

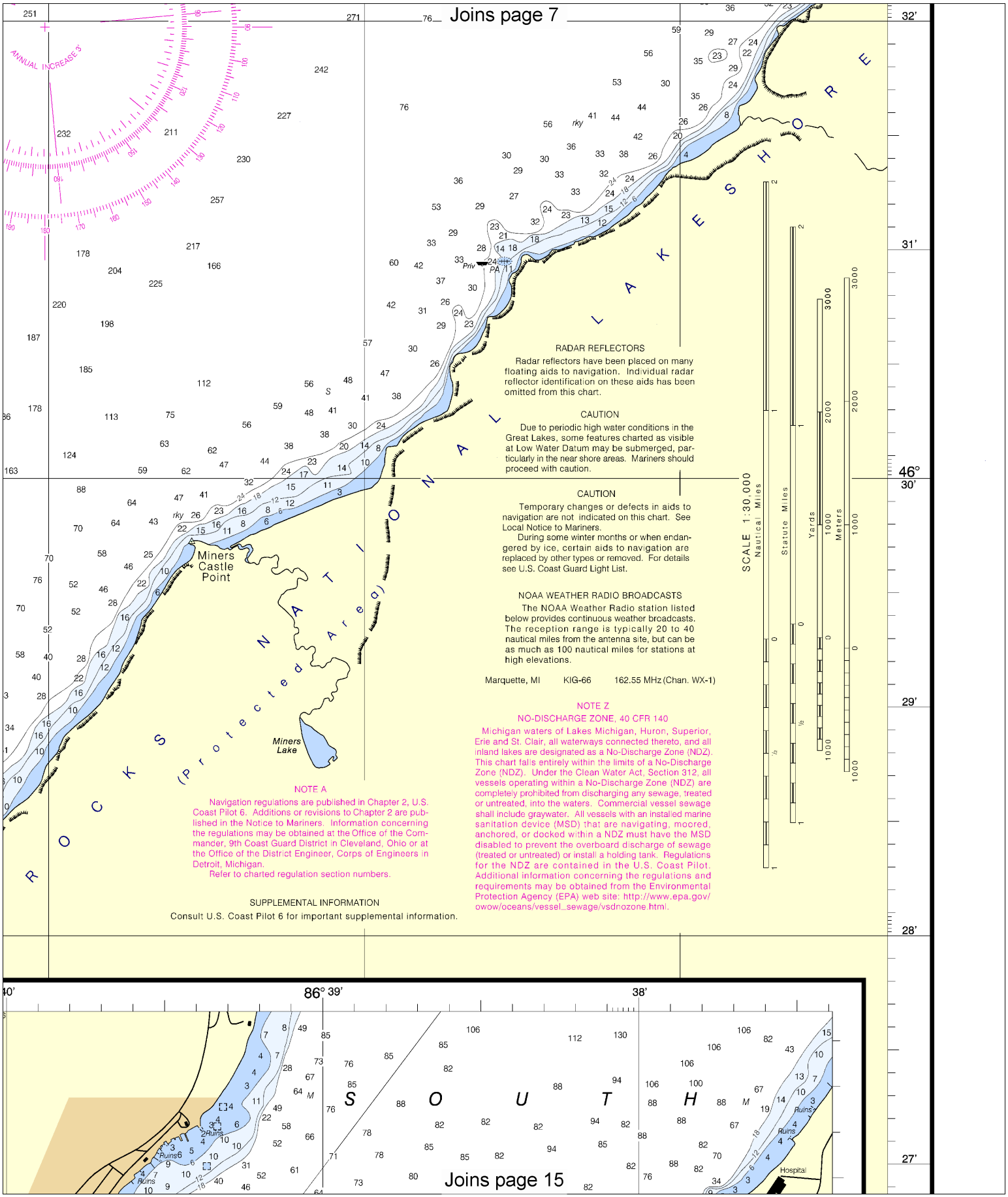
Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:30,000~~

Nautical Miles: 1 0 1 2

Yards: 1000 0 1000 2000 3000

See Note on page 5.


Joins page 7
ANNUAL INCREASE 3'
Miners Castle Point
Miners Lake
ROCKS NATIONAL LAKESHORE (Protected Area)
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SUPPLEMENTAL INFORMATION
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SCALE 1:30,000
Nautical Miles
Statute Miles
Yards
Meters
32'
31'
46°
30'
29'
28'
27'
86° 39'
38'
SOUTH
Ruins
Hospital
Joins page 15

Joins page 8

Fivemile Point

UNITED STATES - GREAT LAKES

LAKE SUPERIOR-MICHIGAN

MUNISING HARBOR
AND
APPROACHES

Mercator Projection
Scale 1:30,000 at Lat 46° 30'

North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET

Additional information can be obtained at nauticalcharts.noaa.gov.

Hanson Creek

Furnace Lake

Ruins

Bay

CHRIST

NOTES

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LOGARITHMIC SPEED SCALE

1 2 3 4 5 6 7 8 9 10 15 20 25 30 40 50 60

To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

SCALE 1:30,000

Nautical Miles 1 ½ 0 1 2

Statute Miles 1 ½ 0 1 2

Yards 1000 0 1000 2000 3000

Meters 1000 0 1000 2000 3000

B1 1990 - 1998 NC
j Pre - 1974 La

Most of the hydrograph
Army Corps of Enginee
the limits of the most r
been evaluated for chart
date and type of survey.
Corps of Engineers are
diagram. Refer to Chapte

86°47'35.0"W
46°23'57.5"N

24' 25' 26' 27' 28'

47' 46' 45' 44' 43' 42

22nd Ed., Apr. /05 ■ Corrected through NM Apr. 30/05
Corrected through LNM Apr. 19/05

14969

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner.

This nautical chart has been designed to promote s
Ocean Service encourages users to submit corrections,
improving this chart to the Chief, Marine Chart Divisio
Service, NOAA, Silver Spring, Maryland 20910-3282.

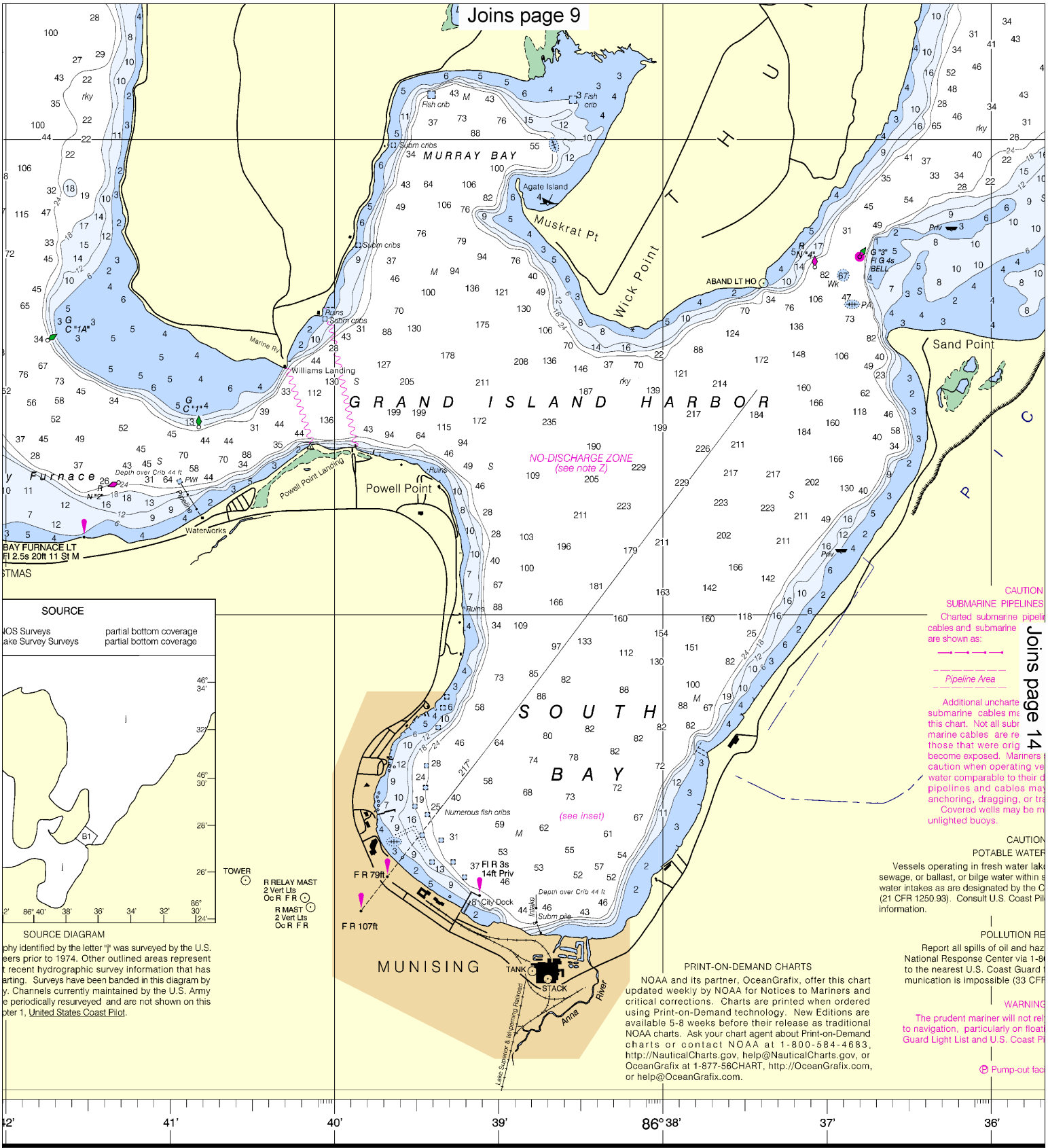
Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:30,000~~

Nautical Miles 1 0 1 2

Yards 1000 0 1000 2000 3000

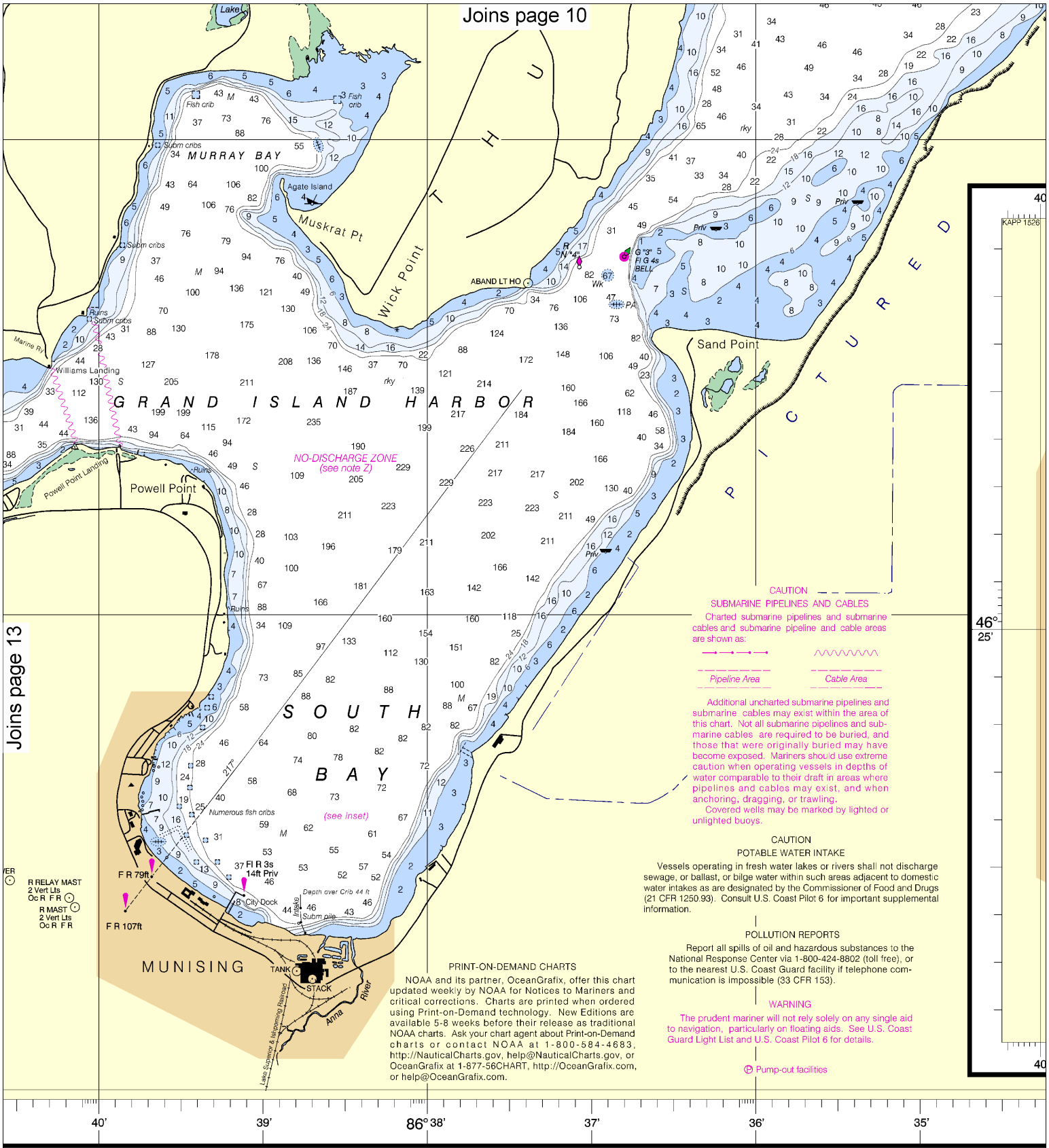
See Note on page 5.



safe navigation. The National
s, additions, or comments for
ion (N/CS2), National Ocean

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

SOUNDING



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WARNING

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Ⓟ Pump-out facilities

PRINT-ON-DEMAND CHARTS

NOAA and its partner, OceanGrafix, offer this chart updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts or contact NOAA at 1-800-584-4683, http://NauticalCharts.gov, help@NauticalCharts.gov, or OceanGrafix at 1-877-56CHART, http://OceanGrafix.com, or help@OceanGrafix.com.

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

SOUNDINGS IN FEET

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:30,000~~

Nautical Miles: 1 0 1 2

Yards: 1000 0 1000 2000 3000

See Note on page 5.

Coast Pilot 6. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at the Office of the District Engineer, Corps of Engineers in Detroit, Michigan.

Refer to charted regulation section numbers.

SUPPLEMENTAL INFORMATION

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Joins page 11

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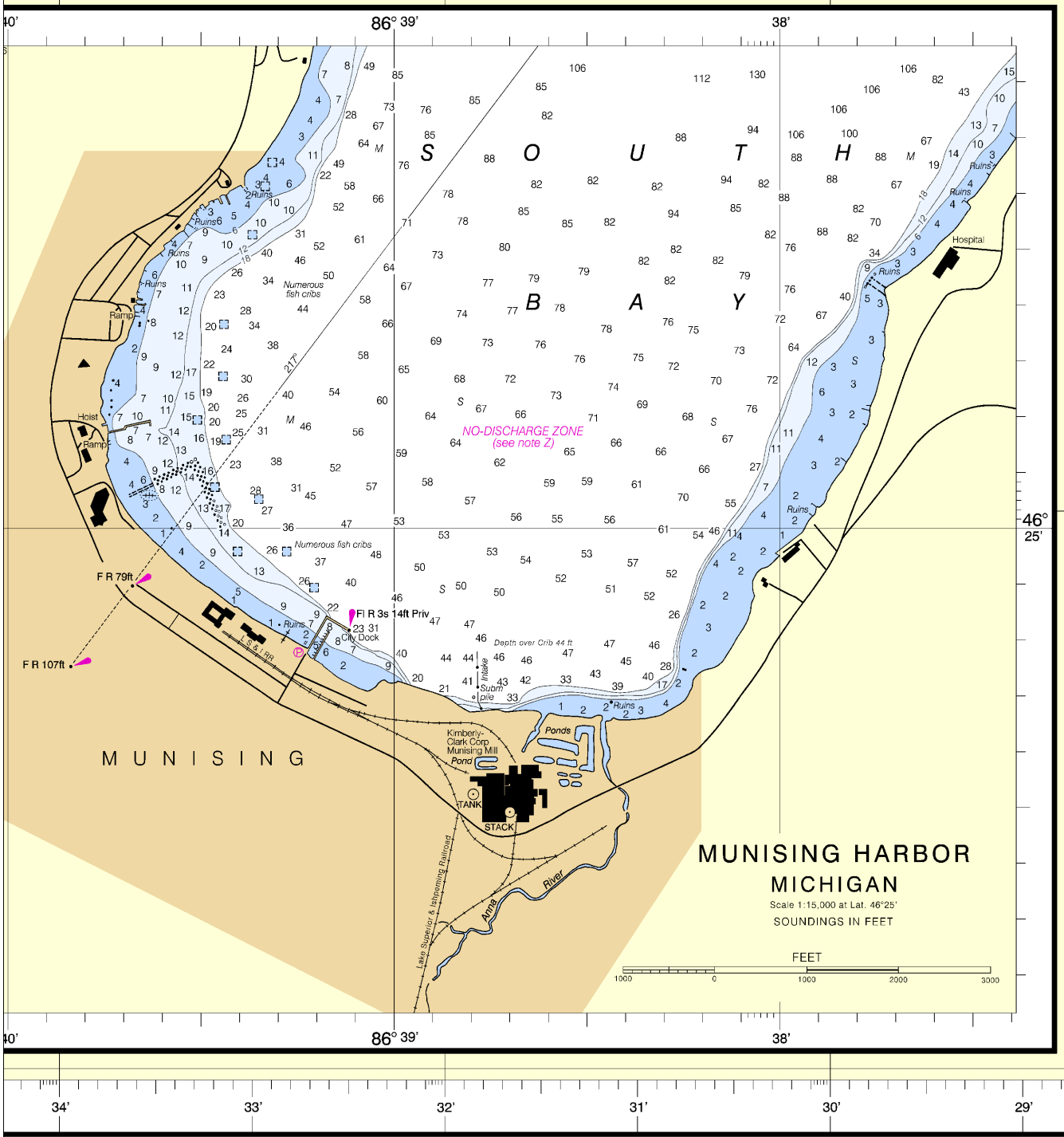

FATHOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
FEET	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	
METERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Munising Harbor

SOUNDINGS IN FEET - SCALE 1:30,000

14969

ED NO 22

NSN 7642014010710 NGA REFERENCE NO. 14XHA14969

EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.
Channel 9 – Communications between boats and ship-to-coast.
Channel 13 – Navigation purposes at bridges, locks, and harbors.
Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.
Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.
Channels 68, 69, 71, 72 and 78A – Recreational boat channels.

Getting and Giving Help — Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

Distress Call Procedures

- Make sure radio is on.
- Select Channel 16.
- Press/Hold the transmit button.
- Clearly say: "MAYDAY, MAYDAY, MAYDAY."
- Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
- Release transmit button.
- Wait for 10 seconds — If no response Repeat MAYDAY call.

HAVE ALL PERSONS PUT ON LIFE JACKETS!

All Hazards NOAA Weather Radio NOAA's National Weather Service

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.
http://www.nws.noaa.gov/nwr/

Quick References

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Chart updates (LNM and NM corrections)	—	**http://www.nauticalcharts.noaa.gov/mcd/updates/LNM_NM.html**
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Marine Forecasts	—	**http://www.nws.noaa.gov/om/marine/home.htm**
National Data Buoy Center	—	**http://www.ndbc.noaa.gov/**
NowCoast web portal for coastal conditions	—	**http://www.nowcoast.noaa.gov/**
National Weather Service	—	**http://www.weather.gov/**
National Hurrican Center	—	**http://www.nhc.noaa.gov/**
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Contact Us	—	**http://www.nauticalcharts.noaa.gov/staff/contact.htm**

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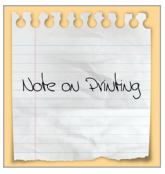

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